

MOUNTING AND INITIAL STARTUP



CHAPTER 2

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SAFETY INFORMATION**DANGER!**

HAZARDOUS VOLTAGE! BEFORE MAKING ANY CONNECTION TO THE MOTOR, DISCONNECT ALL POWER TO THE MOTOR.



WARNING: ANY ELECTRICAL OR MECHANICAL MODIFICATION TO THIS EQUIPMENT WITHOUT PRIOR WRITTEN CONSENT OF AUTOMATIONDIRECT.COM, INC. WILL VOID ALL WARRANTIES, MAY RESULT IN A SAFETY HAZARD, AND MAY VOID THE cCSA_{US} LISTING.



WARNING: TO AVOID PHYSICAL INJURY, KEEP YOUR HANDS AND CLOTHING AWAY FROM ALL MOVING PARTS.

WIRING NOTES: PLEASE READ PRIOR TO INSTALLATION.

- 1) During installation, follow all local electrical, construction, and safety codes for the country in which the motor is to be installed.
- 2) Make sure the appropriate protective devices (circuit breaker or fuses) are connected between the power source and motor controller.
- 3) Make sure that the leads are connected correctly and the motor is properly grounded. (Ground resistance should not exceed 0.1Ω.)
- 4) Use ground leads that comply with AWG/MCM standards and keep them as short as possible.
- 5) Make sure that the power source is capable of supplying the correct voltage and required current to the motor.
- 6) Do not attach or remove wiring when power is applied to the motor.

APPLICABLE CODES

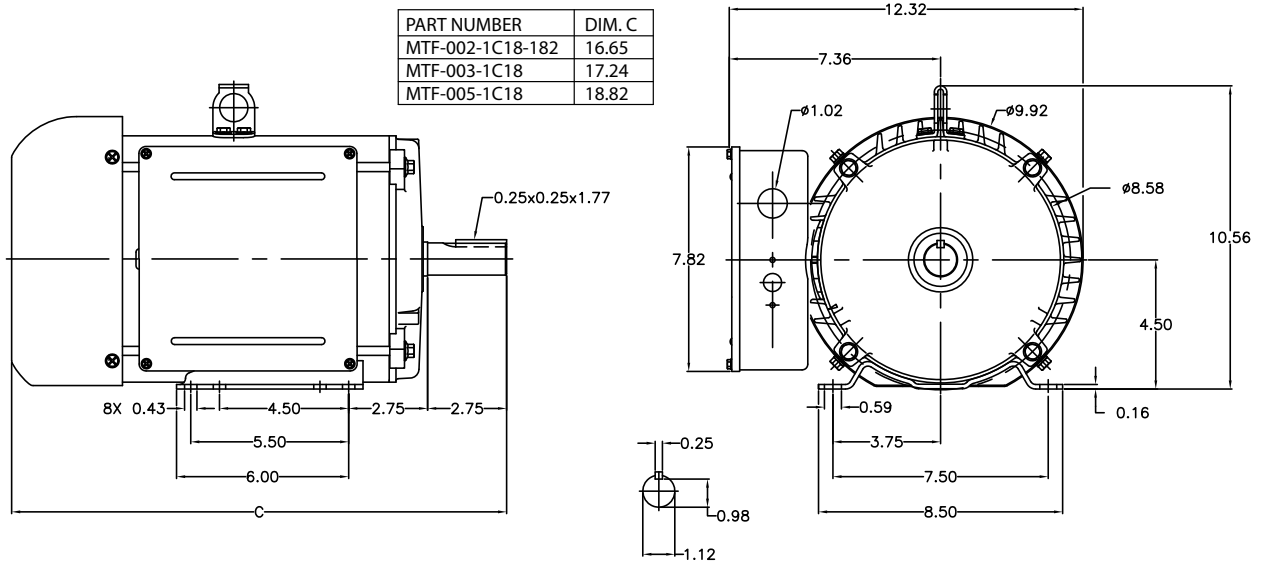
All IronHorse[®] motors are cCSA_{US} listed, and therefore comply with the requirements of the National Electrical Code (NEC) and the Canadian Electrical Code (CEC).

Installation intended to meet the cCSA_{US} requirements must follow the instructions provided in the “Wiring Notes” as a minimum standard. Follow all local codes that exceed cCSA_{US} requirements. Refer to the technical data on the motor nameplate for electrical and performance data.

MOTOR DIMENSIONS

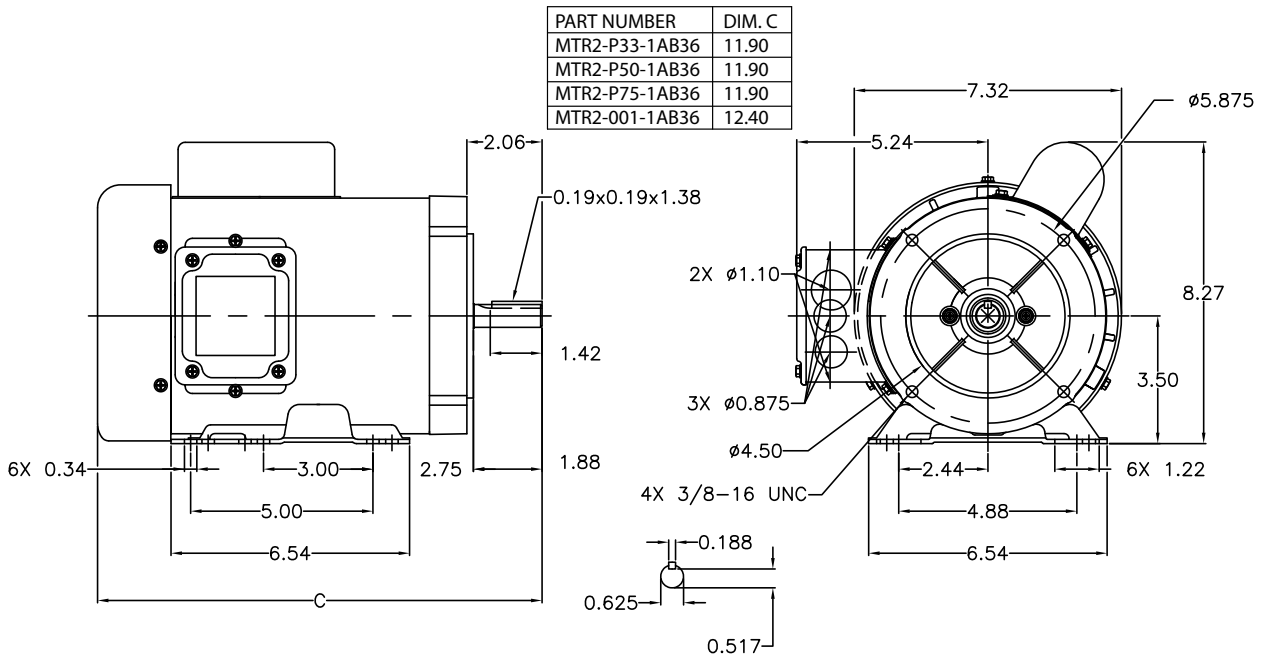
(DIMENSIONS = INCHES)

MTF T-FRAME SINGLE-PHASE FARM-DUTY MOTOR DIMENSIONS



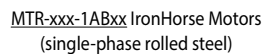
MTR(2) 56(H)C-FRAME SINGLE-PHASE ROLLED-STEEL MOTOR DIMENSIONS

MTR2 56C-FRAME SINGLE-PHASE MOTOR DIMENSIONS, 1/3 – 1 HP



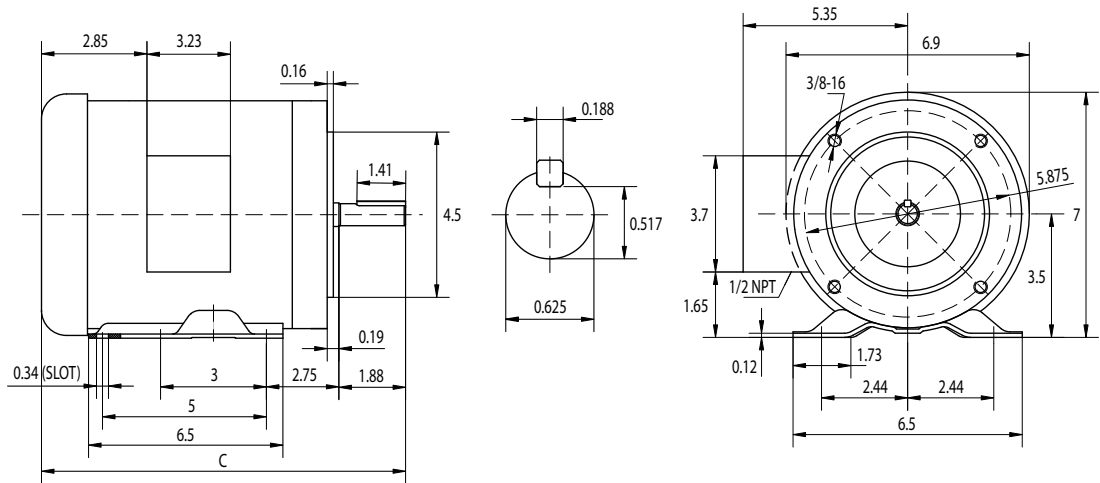
MTR2 56(H)C-FRAME SINGLE-PHASE MOTOR DIMENSIONS, 1-1/2 – 2 HP

MTR 56C-FRAME SINGLE-PHASE ROLLED-STEEL MOTOR DIMENSIONS



MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

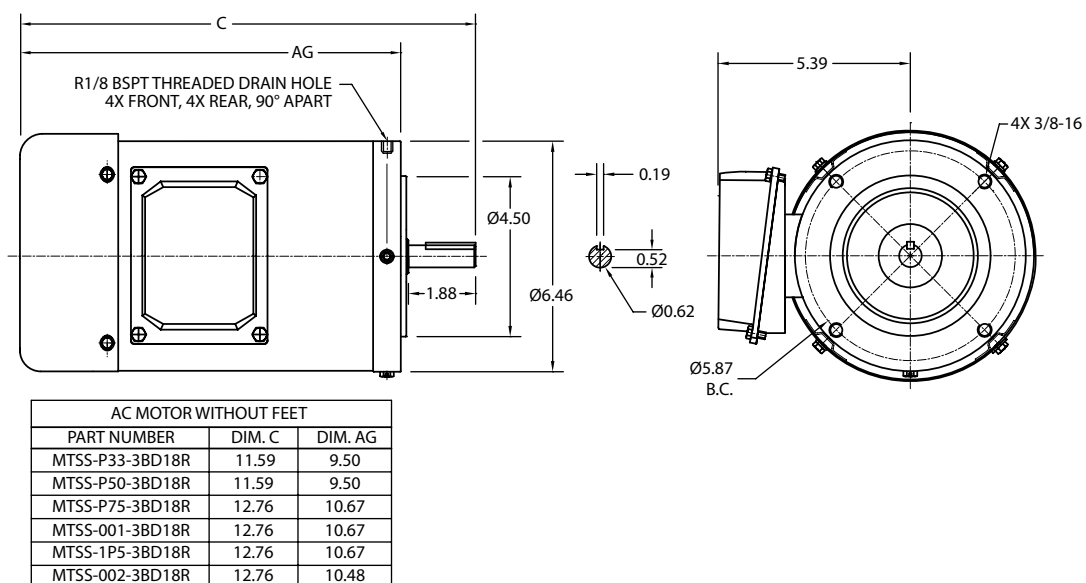
MTR 56C-FRAME THREE-PHASE ROLLED-STEEL MOTOR DIMENSIONS



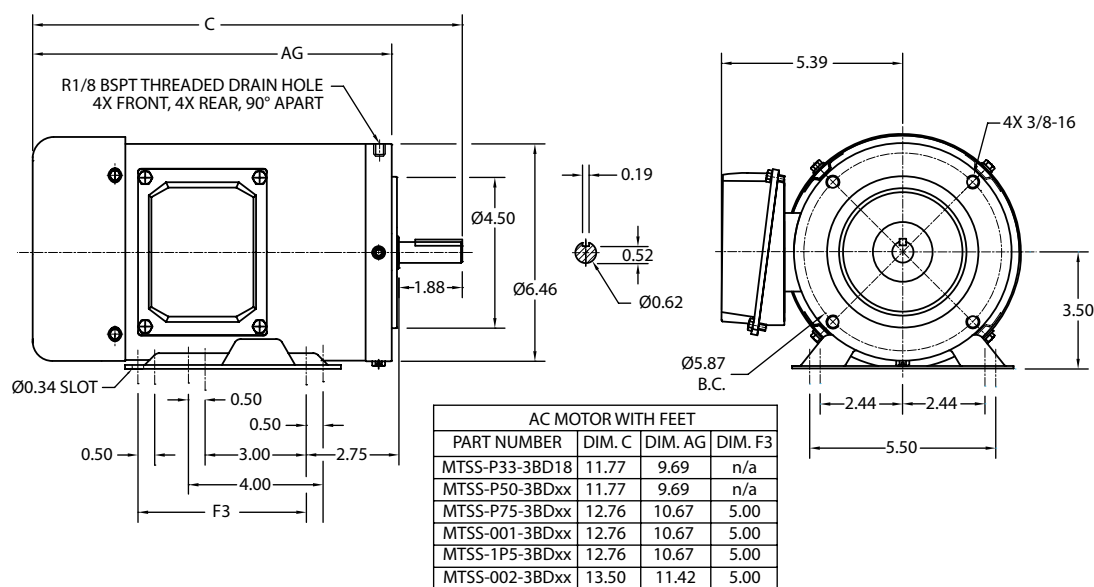
C = 12.2"; 0.33 to 1hp motors
 C = 12.6"; 1.5hp MTR-1P5-3BD18
 C = 12.2"; 1.5hp MTR-1P5-3BD36
 C = 13.8"; 2hp MTR-002-3BD18
 C = 12.4"; 2hp MTR-002-3BD36

MTR-xxx-3BDxx IronHorse Motors
 (3-phase rolled steel)

MTSS 56C-FRAME THREE-PHASE ROUND-BODY MOTOR DIMENSIONS

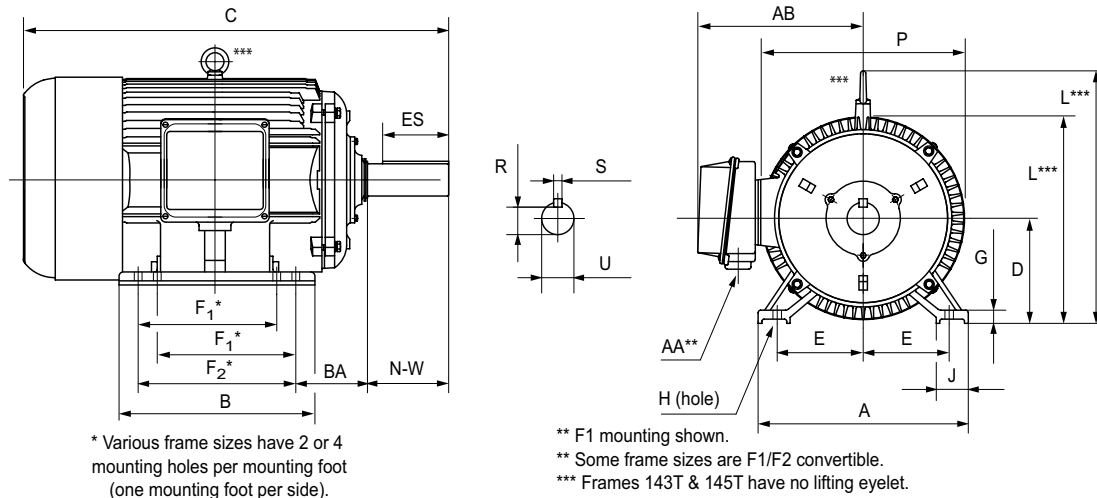


MTSS 56C-FRAME THREE-PHASE RIGID-BASE MOTOR DIMENSIONS

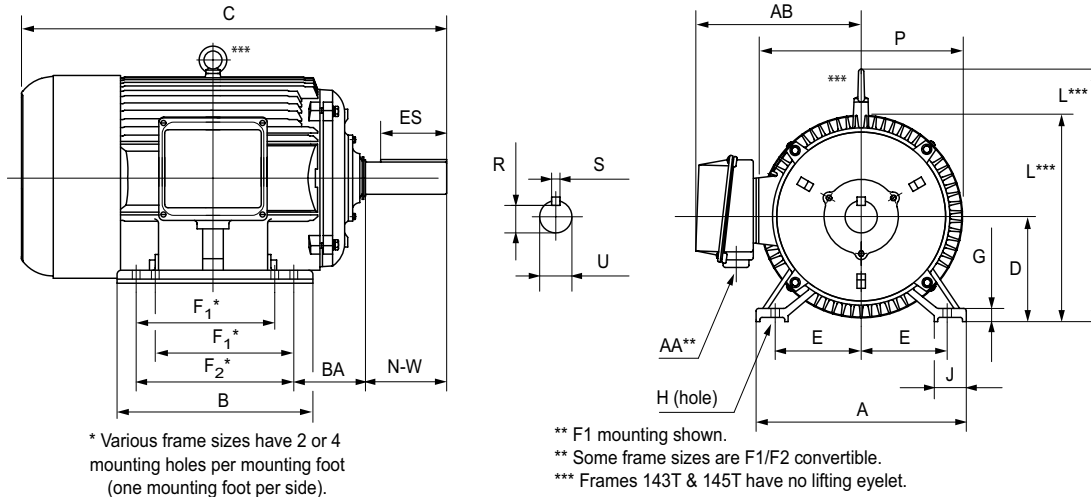


MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTCP PREMIUM-EFFICIENCY T-FRAME THREE-PHASE MOTOR DIMENSIONS



Dimensions [inches, except as noted] Premium-Efficiency Three-Phase T-Frame Motors – 1800 rpm											
Part Number	HP	NEMA Frame	A	AA**	AB	B	BA	C	D	E	ES
MTCP-001-3BD18	1	143T	7	3/4"npt	6.89	5.1	2.25	12.47	3.5	2.75	1.41
MTCP-1P5-3BD18	1-1/2	145T	7	3/4"npt	6.89	6.1	2.25	13.47	3.5	2.75	1.41
MTCP-002-3BD18	2		7	3/4"npt	6.89	6.1	2.25	13.47	3.5	2.75	1.41
MTCP-003-3BD18	3	182T	8.9	1" NPT	7.45	6.3	2.75	15.11	4.5	3.75	1.78
MTCP-005-3BD18	5	184T	8.9	1" NPT	7.45	7.1	2.75	16.12	4.5	3.75	1.78
MTCP-7P5-3BD18	7-1/2	213T	10.5	1" NPT	8.63	7.5	3.5	18.89	5.25	4.25	2.41
MTCP-010-3BD18	10	215T	10.5	1" NPT	8.63	9	3.5	20.49	5.25	4.25	2.41
MTCP-015-3BD18	15	254T	12.3	1.5" NPT	12.0	10.3	4.25	23.29	6.25	5	2.91
MTCP-020-3BD18	20	256T	12.3	1.5" NPT	12.0	12.4	4.25	25.06	6.25	5	2.91
MTCP-025-3BD18	25	284T	13.7	1.5" NPT	13.7	12.2	4.75	26.63	7	5.5	3.28
MTCP-030-3BD18	30	286T	13.7	1.5" NPT	13.7	13.7	4.75	28.18	7	5.5	3.28
MTCP-040-3BD18	40	324T	15.3	2"NPT	15.3	12.6	5.25	29.95	8	6.25	3.91
MTCP-050-3BD18	50	326T	15.3	2"NPT	15.3	14.0	5.25	31.24	8	6.25	3.91
MTCP-060-3BD18	60	364T	17.0	3"NPT	17.31	14.6	5.88	32.58	9	7	4.28
MTCP-075-3BD18	75	365T	17.0	3"NPT	17.31	15.6	5.88	34.11	9	7	4.28
MTCP-100-3BD18	100	405T	20	3"NPT	18.07	17.8	6.62	38.35	10	8	5.65
MTCP-125-3BD18	125	444T	22	2x3"NPT	19.07	18.5	7.5	42.52	11	9	6.91
MTCP-150-3BD18	150	445T	22	2x3"NPT	19.07	20.5	7.5	44.5	11	9	6.91
MTCP-200-3BD18	200	445/7T	22	2x3"NPT	19.07	24	7.5	48.03	11	9	6.91
<p>* Various frame sizes have 2 or 4 mounting holes per mounting foot.</p> <p>** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table. (F2 mounting = conduit entrance on right side facing shaft.)</p> <p>*** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.</p> <p>**** TABLE CONTINUED NEXT PAGE (for dimensions F₁–U) ****</p>											

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)
MTCP PREMIUM-EFFICIENCY T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)

****** TABLE CONTINUED FROM PREVIOUS PAGE (for dimensions A–ES) ******
**Dimensions [inches, except as noted]
Premium-Efficiency Three-Phase T-Frame Motors – 1800 rpm**

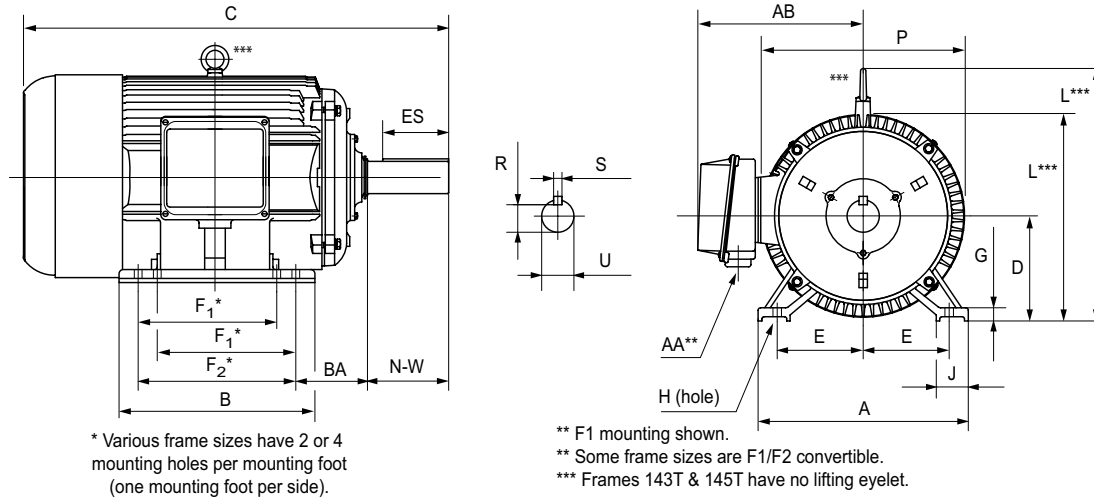
Part Number	HP	F ₁ *	F ₂ *	G	H	J	N-W	L	P	R	S	U
MTCP-001-3BD18	1	n/a	4	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-1P5-3BD18	1-1/2	4	5	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-002-3BD18	2	4	5	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-003-3BD18	3	n/a	4.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-005-3BD18	5	4.5	5.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-7P5-3BD18	7-1/2	n/a	5.5	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-010-3BD18	10	5.5	7	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-015-3BD18	15	n/a	8.25	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625
MTCP-020-3BD18	20	8.25	10	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625
MTCP-025-3BD18	25	n/a	9.5	0.98	0.53	2.68	4.62	16.50	16.0	1.591	0.5	1.875
MTCP-030-3BD18	30	9.5	11	0.98	0.53	2.68	4.62	16.50	16.0	1.591	0.5	1.875
MTCP-040-3BD18	40	n/a	10.5	0.98	0.66	2.76	5.25	18.25	17.5	1.845	0.5	2.125
MTCP-050-3BD18	50	10.5	12	0.98	0.66	2.76	5.25	18.25	17.5	1.845	0.5	2.125
MTCP-060-3BD18	60	n/a	11.25	1.10	0.66	3.15	5.88	21.0	19.1	2.021	0.625	2.375
MTCP-075-3BD18	75	11.25	12.25	1.10	0.66	3.15	5.88	21.0	19.1	2.021	0.625	2.375
MTCP-100-3BD18	100	12.25	13.75	1.18	0.81	3.15	7.25	23.46	21.4	2.45	0.75	2.875
MTCP-125-3BD18	125	n/a	14.5	1.38	0.81	3.35	8.5	26.43	23.4	2.88	0.875	3.375
MTCP-150-3BD18	150	14.5	16.5	1.38	0.81	3.35	8.5	26.43	23.4	2.88	0.875	3.375
MTCP-200-3BD18	200	16.5	20	1.38	0.81	3.35	8.5	26.43	23.4	2.88	0.875	3.375

* Various frame sizes have 2 or 4 mounting holes per mounting foot.

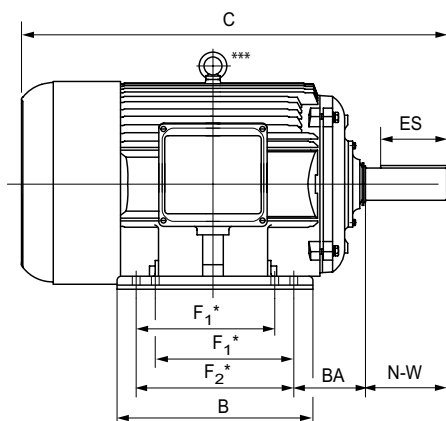
** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table.

(F2 mounting = conduit entrance on right side facing shaft.)

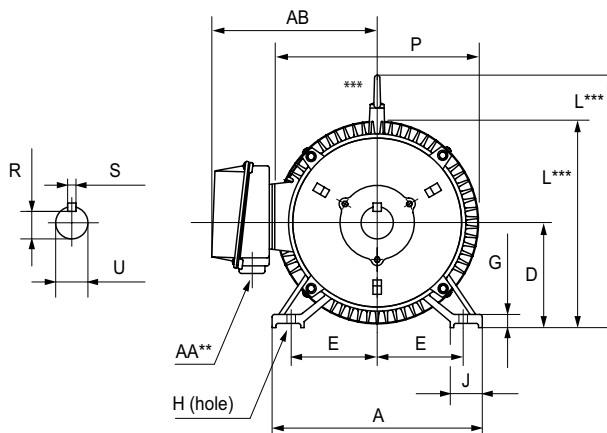
*** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)
MTCP PREMIUM-EFFICIENCY T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)


Dimensions [inches, except as noted] Premium-Efficiency Three-Phase T-Frame Motors – 1200 & 3600 rpm											
Part Number	HP	NEMA Frame	A	AA**	AB	B	BA	C	D	E	ES
1200 rpm Motors											
MTCP-001-3BD12	1	145T	7	3/4" NPT	6.89	6.1	2.25	13.47	3.5	2.75	1.41
MTCP-1P5-3BD12	1-1/2	182T	8.9	1" NPT	7.45	6.3	2.75	15.11	4.5	3.75	1.78
MTCP-002-3BD12	2	184T	8.9	1" NPT	7.45	7.1	2.75	16.12	4.5	3.75	1.78
MTCP-003-3BD12	3	213T	10.5	1" NPT	8.63	7.5	3.5	18.89	5.25	4.25	2.41
MTCP-005-3BD12	5	215T	10.5	1" NPT	8.63	9	3.5	20.49	5.25	4.25	2.41
MTCP-7P5-3BD12	7-1/2	254T	12.3	1.5" NPT	12.0	10.3	4.25	23.29	6.25	5	2.91
MTCP-010-3BD12	10	256T	12.3	1.5" NPT	12.0	12.4	4.25	25.06	6.25	5	2.91
MTCP-015-3BD12	15	284T	13.7	1.5" NPT	13.7	12.2	4.75	26.63	7	5.5	3.28
MTCP-020-3BD12	20	286T	13.7	1.5" NPT	13.7	13.7	4.75	28.18	7	5.5	3.28
3600 rpm Motors											
MTCP-1P5-3BD36	1-1/2	143T	7	3/4" NPT	6.89	5.1	2.25	12.47	3.5	2.75	1.41
MTCP-002-3BD36	2	145T	7	3/4" NPT	6.89	6.1	2.25	13.47	3.5	2.75	1.41
MTCP-003-3BD36	3	182T	8.9	1" NPT	7.45	6.3	2.75	15.11	4.5	3.75	1.78
MTCP-005-3BD36	5	184T	8.9	1" NPT	7.45	7.1	2.75	16.12	4.5	3.75	1.78
MTCP-7P5-3BD36	7-1/2	213T	10.5	1" NPT	8.63	7.5	3.5	18.89	5.25	4.25	2.41
MTCP-010-3BD36	10	215T	10.5	1" NPT	8.63	9	3.5	20.49	5.25	4.25	2.41
MTCP-015-3BD36	15	254T	12.3	1.5" NPT	12.0	10.3	4.25	23.29	6.25	5	2.91
MTCP-020-3BD36	20	256T	12.3	1.5" NPT	12.0	12.4	4.25	25.06	6.25	5	2.91
* Various frame sizes have 2 or 4 mounting holes per mounting foot. ** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table. (F2 mounting = conduit entrance on right side facing shaft.) *** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.											
*** TABLE CONTINUED NEXT PAGE (for dimensions F ₁ -U) ***											

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)**MTCP PREMIUM-EFFICIENCY T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)**

* Various frame sizes have 2 or 4 mounting holes per mounting foot (one mounting foot per side).



** F1 mounting shown.

** Some frame sizes are F1/F2 convertible.

*** Frames 143T & 145T have no lifting eyelet.

**** TABLE CONTINUED FROM PREVIOUS PAGE (for dimensions A–ES) ****

Dimensions [inches, except as noted]												
Premium-Efficiency Three-Phase T-Frame Motors – 1200 & 3600 rpm												
Part Number	HP	F ₁ *	F ₂ *	G	H	J	N-W	L	P	R	S	U
1200 rpm Motors												
MTCP-001-3BD12	1	4	5	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-1P5-3BD12	1-1/2	n/a	4.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-002-3BD12	2	4.5	5.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-003-3BD12	3	n/a	5.5	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-005-3BD12	5	5.5	7	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-7P5-3BD12	7-1/2	n/a	8.25	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625
MTCP-010-3BD12	10	8.25	10	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625
MTCP-015-3BD12	15	n/a	9.5	0.98	0.53	2.68	4.62	16.50	16.0	1.591	0.5	1.875
MTCP-020-3BD12	20	9.5	11	0.98	0.53	2.68	4.62	16.50	16.0	1.591	0.5	1.875
3600 rpm Motors												
MTCP-1P5-3BD36	1-1/2	n/a	4	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-002-3BD36	2	4	5	0.47	0.34	1.45	2.25	6.90	7.2	0.771	0.188	0.875
MTCP-003-3BD36	3	n/a	4.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-005-3BD36	5	4.5	5.5	0.52	0.41	1.97	2.75	10.39	9.0	0.986	0.25	1.125
MTCP-7P5-3BD36	7-1/2	n/a	5.5	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-010-3BD36	10	5.5	7	0.78	0.41	2.36	3.38	12.26	10.8	1.201	0.312	1.375
MTCP-015-3BD36	15	n/a	8.25	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625
MTCP-020-3BD36	20	8.25	10	0.87	0.53	2.40	4	15.10	14.4	1.416	0.375	1.625

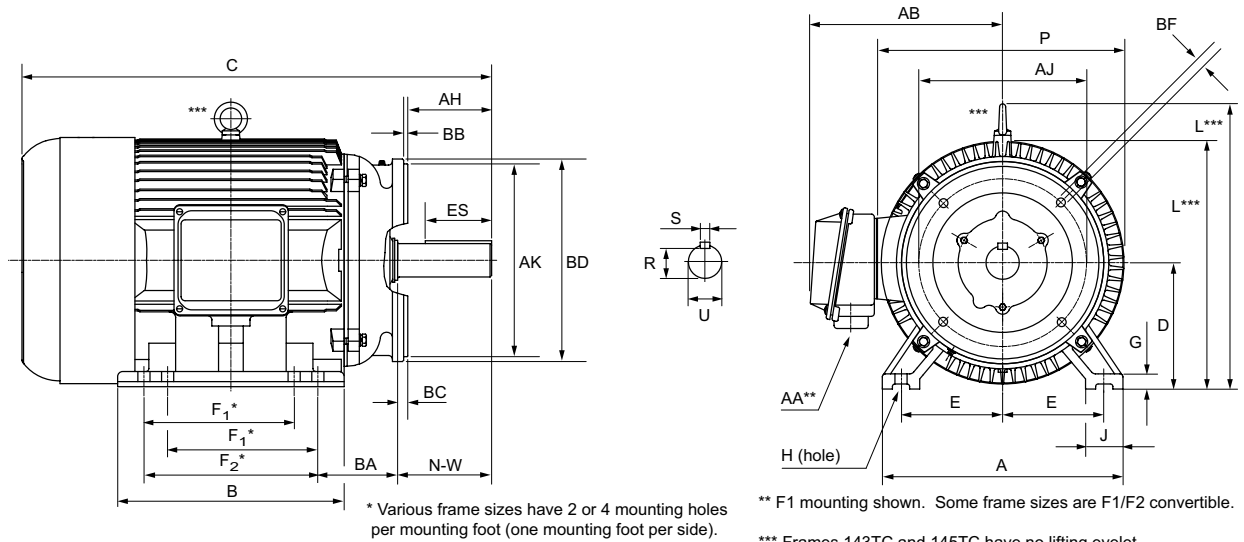
* Various frame sizes have 2 or 4 mounting holes per mounting foot.

** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table.
(F2 mounting = conduit entrance on right side facing shaft.)

*** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTCP PREMIUM-EFFICIENCY TC-FRAME THREE-PHASE MOTOR DIMENSIONS



Dimensions [inches, except as noted] Premium-Efficiency Three-Phase TC-Frame Motors – 1800 rpm															
Part # MTCP- xxx- 3BD18C	HP	NEMA Frame	A	AA**	AB	AH	AJ	AK	B	BA	BB	BC	BD	BF	C
-001-	1	143TC	7	3/4"NPT	6.89	1.96	5.875	4.5	5.1	2.25	0.16	0.29	6.5	3/8-16	12.5
-1P5-	1-1/2	145TC	7	3/4"NPT	6.89	1.96	5.875	4.5	6	2.25	0.16	0.29	6.5	3/8-16	13.5
-002-	2														
-003-	3	182TC	8.9	1" NPT	7.45	2.37	7.25	8.5	6.3	2.75	0.25	0.38	9	1/2-13	15.1
-005-	5	184TC	8.9	1" NPT	7.45	2.37	7.25	8.5	7.1	2.75	0.25	0.38	9	1/2-13	16.1
-7P5-	7-1/2	213TC	10.5	1" NPT	8.63	2.87	7.25	8.5	7.5	3.5	0.25	0.51	9	1/2-13	18.9
-010-	10	215TC	10.5	1" NPT	8.63	2.87	7.25	8.5	9	3.5	0.25	0.51	9	1/2-13	20.5
-015-	15	254TC	12.3	1.5"NPT	12.0	3.75	7.25	8.5	10.3	4.25	0.25	0.25	10	1/2-13	23.3
-020-	20	256TC	12.3	1.5"NPT	12.0	3.75	7.25	8.5	12.4	4.25	0.25	0.25	10	1/2-13	25.1
-025-	25	284TC	13.7	1.5"NPT	13.7	4.38	9	10.5	12.2	4.75	0.25	0.25	11.25	1/2-13	26.6
-030-	30	286TC	13.7	1.5"NPT	13.7	4.38	9	10.5	13.7	4.75	0.25	0.24	11.25	1/2-13	28.2
-040-	40	324TC	15.3	2" NPT	15.3	5	11	12.5	12.6	5.25	0.25	0.24	14	5/8-11	30.0
-050-	50	326TC	15.3	2" NPT	15.3	5	11	12.5	14.0	5.25	0.25	0.25	14	5/8-11	31.2
-060-	60	364TC	17.0	3" NPT	17.3	5.62	11	12.5	14.6	5.88	0.25	0.25	14	5/8-11	32.6
-075-	75	365TC	17.0	3" NPT	17.3	5.62	11	12.5	15.6	5.88	0.25	0.25	14	5/8-11	34.1
-100-	100	405TC	20	3" NPT	18.1	7	11	12.5	17.8	6.62	0.25	0.25	15.5	5/8-11	38.4

* Various frame sizes have 2 or 4 mounting holes per mounting foot.

** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame “Motor Specifications” table.

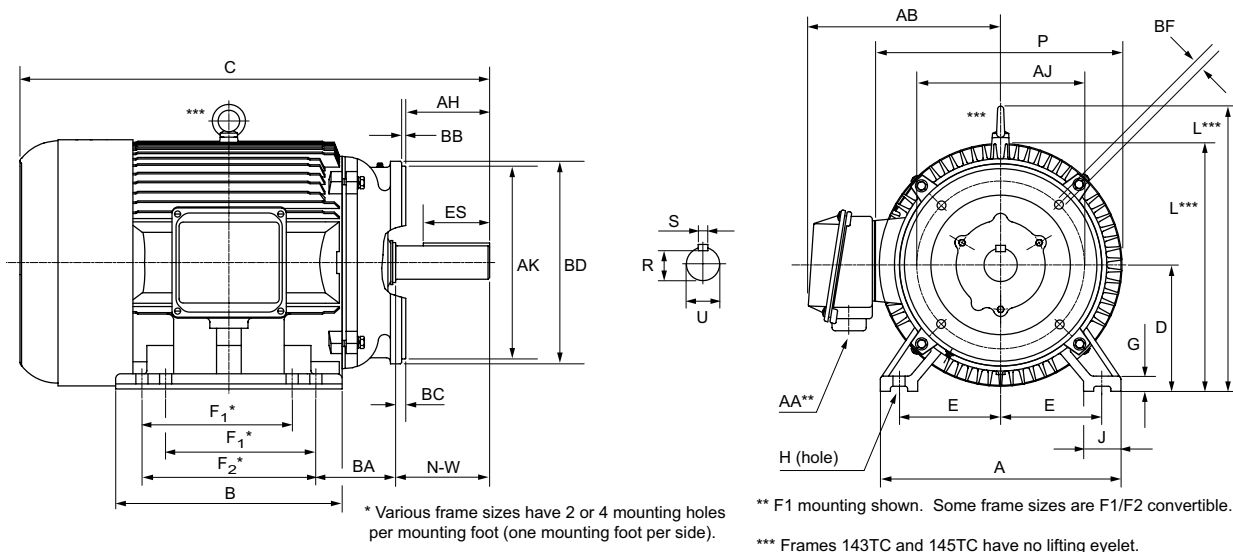
(F2 mounting = conduit entrance on right side facing shaft.)

*** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.

**** **TABLE CONTINUED NEXT PAGE (for dimensions D–U) ******

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTCP PREMIUM-EFFICIENCY TC-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)



**** TABLE CONTINUED FROM PREVIOUS PAGE (for dimensions A–C) ****

**Dimensions [inches, except as noted]
Premium-Efficiency Three-Phase TC-Frame Motors – 1800 rpm**

Part # MTCP- xxx- 3BD18C	HP	D	E	ES	F ₁ *	F ₂ *	G	H	J	N-W	L	P	R	S	U
-001-	1	3.5	2.75	1.41	n/a	4	0.47	0.34	1.45	2.25	6.9	7.2	0.771	0.188	0.875
-1P5-	1-1/2	3.5	2.75	1.41	4	5	0.47	0.34	1.45	2.25	6.9	7.2	0.771	0.188	0.875
-002-	2														
-003-	3	4.5	3.75	1.78	n/a	4.5	0.52	0.41	1.97	2.75	10.4	9.0	0.986	0.25	1.125
-005-	5	4.5	3.75	1.78	4.5	5.5	0.52	0.41	1.97	2.75	10.4	9.0	0.986	0.25	1.125
-7P5-	7-1/2	5.25	4.25	2.41	n/a	5.5	0.78	0.41	2.36	3.38	12.3	10.8	1.201	0.312	1.375
-010-	10	5.25	4.25	2.41	5.5	7	0.78	0.41	2.36	3.38	12.3	10.8	1.201	0.312	1.375
-015-	15	6.25	5	2.91	n/a	8.25	0.87	0.53	2.40	4	15.1	14.4	1.416	0.375	1.625
-020-	20	6.25	5	2.91	8.25	10	0.87	0.53	2.40	4	15.1	14.4	1.416	0.375	1.625
-025-	25	7	5.5	3.28	n/a	9.5	0.98	0.53	2.68	4.62	16.5	16.0	1.591	0.5	1.875
-030-	30	7	5.5	3.28	9.5	11	0.98	0.53	2.68	4.62	16.5	16.0	1.591	0.5	1.875
-040-	40	8	6.25	3.91	n/a	10.5	0.98	0.66	2.76	5.25	18.3	17.5	1.854	0.5	2.125
-050-	50	8	6.25	3.91	10.5	12	0.98	0.66	2.76	5.25	18.3	17.5	1.845	0.5	2.125
-060-	60	9	7	4.28	n/a	11.25	1.10	0.66	3.15	5.88	21.0	19.1	2.021	0.625	2.375
-075-	75	9	7	4.28	11.25	12.25	1.10	0.66	3.15	5.88	21.0	19.1	2.021	0.625	2.375
-100-	100	10	8	5.65	12.25	13.75	1.18	0.81	3.15	7.25	23.5	21.4	2.45	0.75	2.875

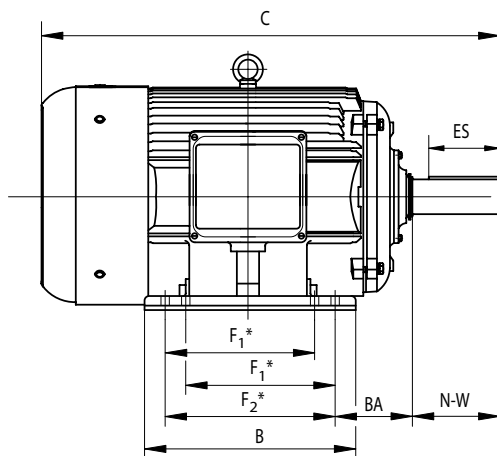
* Various frame sizes have 2 or 4 mounting holes per mounting foot.

** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table.
(F2 mounting = conduit entrance on right side facing shaft.)

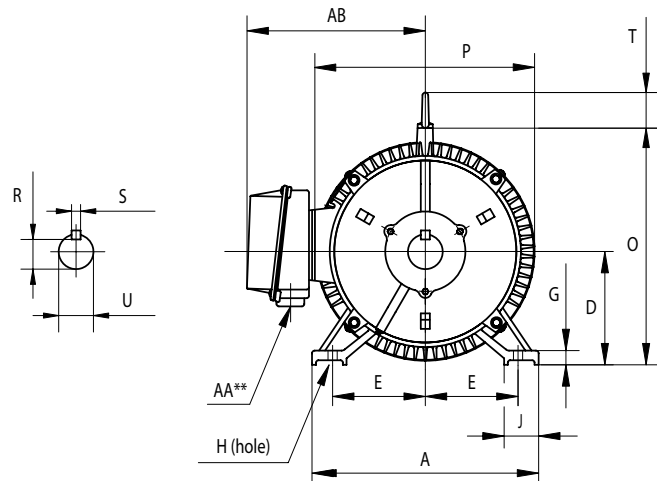
*** Frame sizes 143T(C) and 145T(C) have no lifting eyelet.

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTC EPACT T-FRAME THREE-PHASE MOTOR DIMENSIONS



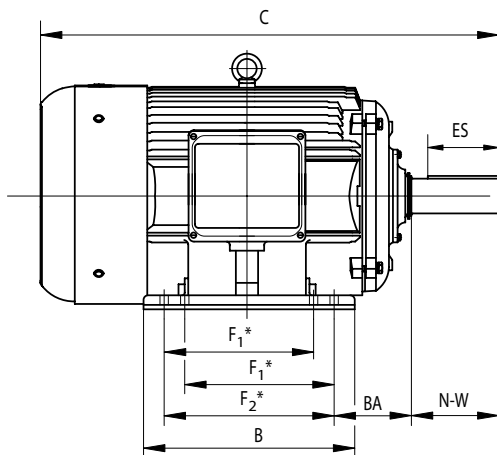
* Various frame sizes have 2 or 4 mounting holes per mounting foot (one mounting foot per side).



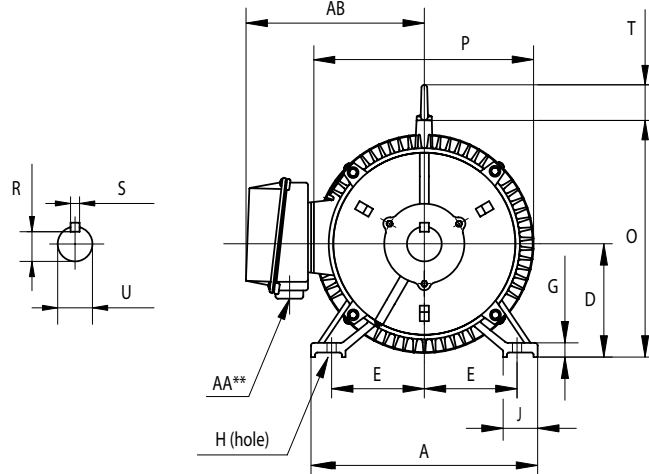
** F1 mounting shown.

** Some frame sizes are F1/F2 convertible.

Dimensions [inches, except as noted] EPAct Three-phase T-Frame Motors – 1200, 1800, 3600 rpm											
Part Number	HP	NEMA Frame	A	AA**	AB	B	BA	C	D	E	ES
MTC-001-3BD12	1	145T	7	3/4”npt	6.89	6	2.25	13.58	3.5	2.75	1.41
MTC-001-3BD18		143T				5		12.57			
MTC-1P5-3BD12	1-1/2	182T	9	1” NPT	7.45	6.5	2.75	15.11	4.5	3.75	1.78
MTC-1P5-3BD18		145T	7	3/4”npt	6.89	6	2.25	13.58	3.5	2.75	1.41
MTC-1P5-3BD36						5		12.57			
MTC-002-3BD12	2	184T	9	1” NPT	7.45	7.5	2.75	16.11	4.5	3.75	1.78
MTC-002-3BD18		145T	7	3/4”npt	6.89	6	2.25	13.58	3.5	2.75	1.41
MTC-002-3BD36											
MTC-003-3BD12	3	213T	10.5	1” NPT	8.63	7.5	3.5	18.89	5.25	4.25	2.41
MTC-003-3BD18		182T	9	1” NPT	7.45	6.5	2.75	15.11	4.5	3.75	1.78
MTC-003-3BD36											
MTC-005-3BD12	5	215T	10.5	1” NPT	8.63	9	3.5	20.49	5.25	4.25	2.41
MTC-005-3BD18		184T	9	1” NPT	7.45	7.5	2.75	16.11	4.5	3.75	1.78
MTC-005-3BD36											
MTC-7P5-3BD12	7-1/2	254T	12.5	1.5” NPT	11.2	10.8	4.25	23.29	6.25	5	2.91
MTC-7P5-3BD18		213T	10.5	1” NPT	8.63	7.5	3.5	18.89	5.25	4.25	2.41
MTC-7P5-3BD36											
MTC-010-3BD12	10	256T	12.5	1.5” NPT	11.2	12.5	4.25	25.06	6.25	5	2.91
MTC-010-3BD18		215T	10.5	1” NPT	8.63	9	3.5	20.49	5.25	4.25	2.41
MTC-010-3BD36											
<p>* Various frame sizes have 2 or 4 mounting holes per mounting foot.</p> <p>** AA dimension is conduit fitting size.</p> <p>F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame “Motor Specifications” table. (F2 mounting = conduit entrance on right side facing shaft.)</p>											
**** TABLE CONTINUED NEXT PAGE (for dimensions F1–U) ****											

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)
MTC EPACT T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)


* Various frame sizes have 2 or 4 mounting holes per mounting foot (one mounting foot per side).



** F1 mounting shown.
** Some frame sizes are F1/F2 convertible.

**** Table Continued Previous Page (for dimensions A–ES) ****

Dimensions [inches, except as noted]

EPAct Three-phase T-Frame Motors – 1200, 1800, 3600 rpm

Part Number	F ₁ *	F ₂ *	G	H	J	N-W	O	P	R	S	T	U
MTC-001-3BD12	4	5	0.512	0.34	1.45	2.25	7.08	7.16	0.771	0.188	0.88	0.875
MTC-001-3BD18	n/a	4									n/a	
MTC-1P5-3BD12	n/a	4.5	0.59	0.41	1.97	2.75	8.97	8.82	0.986	0.25	1.42	1.125
MTC-1P5-3BD18	4	5	0.512	0.34	1.45	2.25	7.08	7.16	0.771	0.188	n/a	0.875
MTC-1P5-3BD36	n/a	4										
MTC-002-3BD12	4.5	5.5	0.59	0.41	1.97	2.75	8.97	8.82	0.986	0.25	1.42	1.125
MTC-002-3BD18	4	5	0.512	0.34	1.45	2.25	7.08	7.16	0.771	0.188	n/a	0.875
MTC-002-3BD36											0.88	
MTC-003-3BD12	n/a	5.5	0.709	0.41	2.36	3.38	10.53	10.4	1.201	0.312	1.73	1.375
MTC-003-3BD18	n/a	4.5	0.59	0.41	1.97	2.75	8.97	8.82	0.986	0.25	1.42	1.125
MTC-003-3BD36												
MTC-005-3BD12	5.5	7	0.709	0.41	2.36	3.38	10.53	10.4	1.201	0.312	1.73	1.375
MTC-005-3BD18	4.5	5.5	0.59	0.41	1.97	2.75	8.97	8.82	0.986	0.25	1.42	1.125
MTC-005-3BD36												
MTC-7P5-3BD12	n/a	8.25	0.787	0.53	2.76	4	12.89	12.6	1.416	0.375	2.05	1.625
MTC-7P5-3BD18	n/a	5.5	0.709	0.41	2.36	3.38	10.53	10.4	1.201	0.312	1.73	1.375
MTC-7P5-3BD36												
MTC-010-3BD12	8.25	10	0.787	0.53	2.76	4	12.89	12.6	1.416	0.375	2.05	1.625
MTC-010-3BD18	5.5	7	0.709	0.41	2.36	3.38	10.53	10.4	1.201	0.312	1.73	1.375
MTC-010-3BD36												

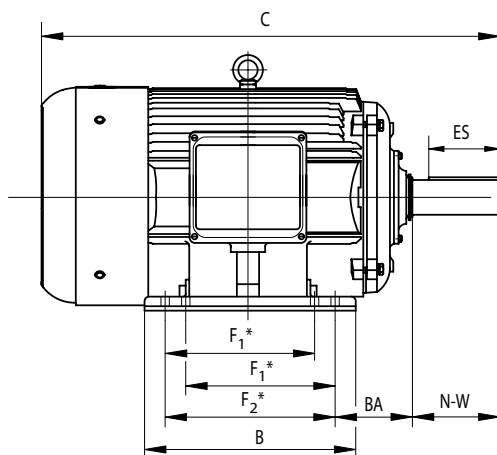
* Various frame sizes have 2 or 4 mounting holes per mounting foot.

** AA dimension is conduit fitting size.

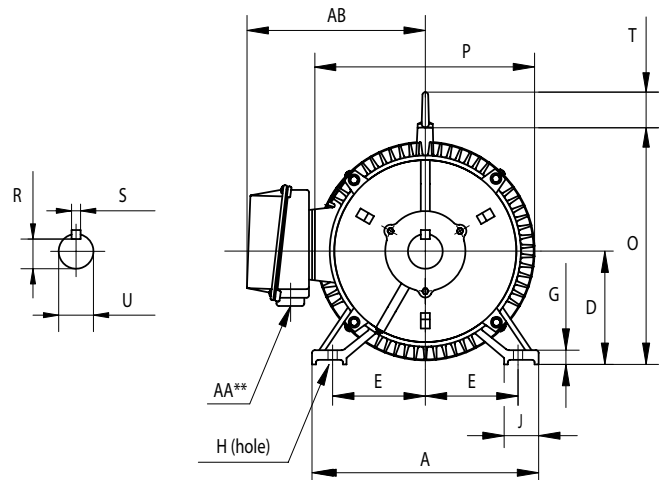
F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame “Motor Specifications” table. (F2 mounting = conduit entrance on right side facing shaft.)

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTC EPACT T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)



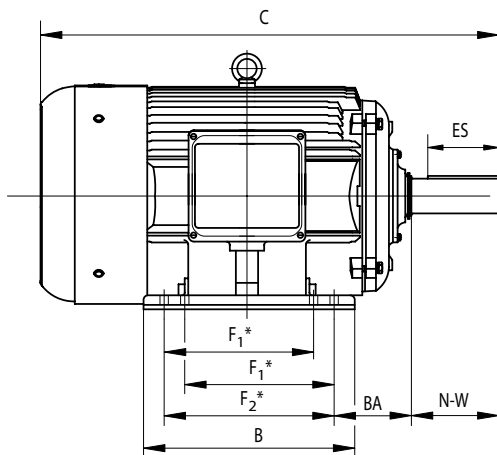
* Various frame sizes have 2 or 4 mounting holes per mounting foot (one mounting foot per side).



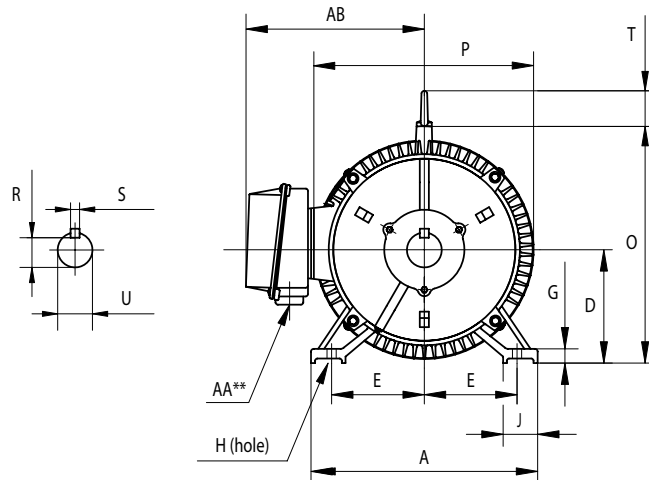
** F1 mounting shown.

** Some frame sizes are F1/F2 convertible.

Dimensions [inches, except as noted] EPAct Three-phase T-Frame Motors – 1800 rpm											
Part Number	HP	NEMA Frame	A	AA**	AB	B	BA	C	D	E	ES
MTC-015-3BD18	15	254T	12.5	1.5" NPT	11.2	10.8	4.25	23.29	6.25	5	2.91
MTC-020-3BD18	20	256T				12.5		25.06			
MTC-025-3BD18	25	284T	14	1.5" NPT	12	12.5	4.75	26.64	7	5.5	3.28
MTC-030-3BD18	30	286T				14		28.18			
MTC-040-3BD18	40	324T	16	2" NPT	13.4	14	5.25	29.95	8	6.25	3.91
MTC-050-3BD18	50	326T				15.5		31.24			
MTC-060-3BD18	60	364T	18	3" NPT	15.7	15.2	5.88	32.68	9	7	4.28
MTC-075-3BD18	75	365T				16.2		34.11			
MTC-100-3BD18	100	405T	20	3" NPT	18.31	17.8	6.62	38.35	10	8	5.65
MTC-125-3BD18	125	444T	22	2x3"NPT	19.41	18.5	7.5	42.52	11	9	6.91
MTC-150-3BD18	150	445T				20.5		44.5			
MTC-200-3BD18	200	445/7T				24		48.03			
MTC-250-3D18	250	449T	22	2x3"NPT	19.07	31	7.5	55.51	11	9	7.01
MTC-300-3D18	300										
* Various frame sizes have 2 or 4 mounting holes per mounting foot. ** AA dimension is conduit fitting size. F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame "Motor Specifications" table. (F2 mounting = conduit entrance on right side facing shaft.)											
**** TABLE CONTINUED NEXT PAGE (for dimensions F1–U) ****											

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)
MTC EPACT T-FRAME THREE-PHASE MOTOR DIMENSIONS (CONTINUED)


* Various frame sizes have 2 or 4 mounting holes per mounting foot (one mounting foot per side).



** F1 mounting shown.
** Some frame sizes are F1/F2 convertible.

**** Table Continued Previous Page (for dimensions A–ES) ****

Dimensions [inches, except as noted]
EPAct Three-phase T-Frame Motors – 1800 rpm

Part Number	F ₁ *	F ₂ *	G	H	J	N-W	O	P	R	S	T	U
MTC-015-3BD18	n/a	8.25	0.787	0.53	2.76	4	12.89	12.6	1.416	0.375	2.05	1.625
MTC-020-3BD18	8.25	10										
MTC-025-3BD18	n/a	9.5	0.866	0.53	2.76	4.62	14.28	14.17	1.591	0.5	2.05	1.875
MTC-030-3BD18	9.5	11										
MTC-040-3BD18	n/a	10.5	0.984	0.66	2.76	5.25	15.91	15.75	1.845	0.5	2.44	2.125
MTC-050-3BD18	10.5	12										
MTC-060-3BD18	n/a	11.25	1.102	0.66	2.95	5.88	18.13	17.7	2.021	0.625	2.44	2.375
MTC-075-3BD18	11.25	12.25										
MTC-100-3BD18	12.25	13.75	1.18	0.81	3.15	7.25	21.02	21.42	2.45	0.75	2.83	2.875
MTC-125-3BD18	n/a	14.5	1.38	0.81	3.35	8.5	22.97	23.43	2.88	0.875	3.46	3.375
MTC-150-3BD18	14.5	16.5										
MTC-200-3BD18	16.5	20	1.575	0.81	3.35	8.5	23	24	2.88	0.875	4.25	3.375
MTC-250-3D18	n/a	25										
MTC-300-3D18												

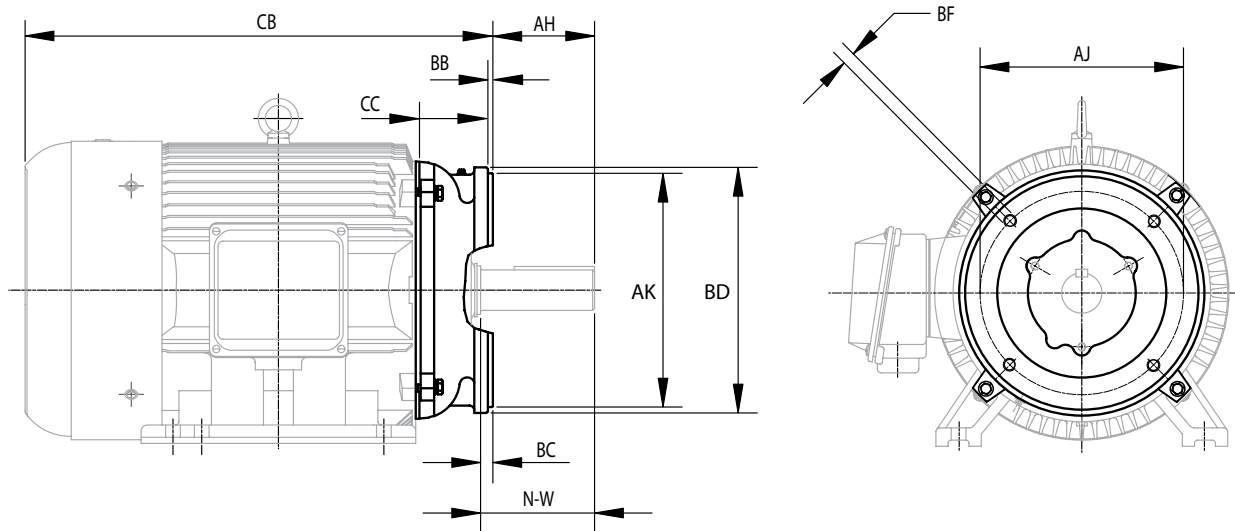
* Various frame sizes have 2 or 4 mounting holes per mounting foot.

** AA dimension is conduit fitting size.

F1 mounting shown; some frame sizes are F1/F2 convertible; refer to T-frame “Motor Specifications” table.
(F2 mounting = conduit entrance on right side facing shaft.)

MOTOR DIMENSIONS (CONTINUED) – (DIMENSIONS = INCHES)

MTC EPACT TC-FRAME THREE-PHASE MOTOR & C-FLANGE DIMENSIONS



TC-FRAME MOTORS ARE T-FRAME EPACT MOTORS WITH C-FLANGE ACCESSORY KITS INSTALLED. FOR MORE INFORMATION ABOUT THE C-FLANGE ACCESSORY KITS, REFER TO CHAPTER 4: ACCESSORIES.

Dimensions (inches) - EPAct T-Frame Motor C-Flange Kits											
Part Number	Frame	AH ⁽²⁾	AJ	AK	BB	BC ⁽²⁾	BD	BF	CB ⁽²⁾	CC	N-W ⁽²⁾
MTA-CFACE-140TC⁽¹⁾	143T	1.96	5.875 ⁽¹⁾	4.5 ⁽¹⁾	0.16	0.12	6.5	3/8-16	10.51	1.43	2.25
	145T								11.62		
MTA-CFACE-180TC	182T	2.62	7.25	8.5	0.25	0.12	9	1/2-13	12.49	1.17	2.75
	184T								13.49		
MTA-CFACE-210TC	213T	3.12	7.25	8.5	0.25	0.25	9	1/2-13	15.77	1.45	3.38
	215T								17.37		
MTA-CFACE-250TC	254T	3.75	7.25	8.5	0.25	0.25	10	1/2-13	19.54	2.89	4
	256T								21.31		
MTA-CFACE-280TC	284T	4.38	9	10.5	0.25	0.25	11.25	1/2-13	22.26	3.26	4.62
	286T								23.80		
MTA-CFACE-320TC	324T	5	11	12.5	0.25	0.25	14	5/8-11	24.95	3.67	5.25
	326T								26.24		
MTA-CFACE-360TC	364T	5.62	11	12.5	0.25	0.25	14	5/8-11	27.06	4.06	5.88
	365T								28.49		
MTA-CFACE-400TC	405T	7	11	12.5	0.25	0.25	15.5	5/8-11	31.35	4.33	7.25
MTA-CFACE-444TC	444T	8.25	14	16	0.25	0.25	18	5/8-11	34.27	4.11	8.5
	445T								36.25		
MTA-CFACE-447TC	445/7T	8.25	14	16	0.25	0.25	18	5/8-11	39.78	4.11	8.5
MTA-CFACE-449TC	449T	8.248	14	16	0.26	0.26	17.72	5/8-11	47.26	4.35	8.5

1) Mounting bolt holes for MTA-CFACE-140TC are located outside of the highest C-face flange surface (dimension AJ > AK).

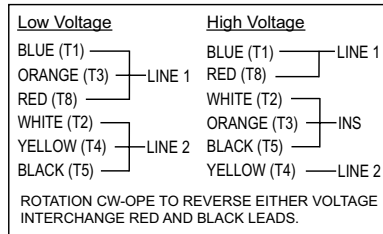
2) Motor dependent dimensions apply only to IronHorse MTC-xxx-xxxxx(CK) motors.

TERMINAL AND WIRING DIAGRAMS

IRONHORSE® SINGLE-PHASE MOTORS

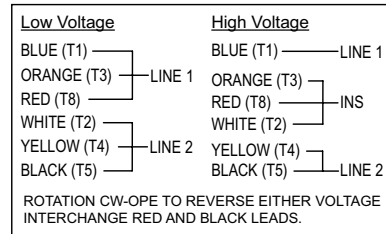
MTR GENERAL-PURPOSE MOTORS

1/3 hp – 1.5hp 1Ø MTR models
6-Lead, 115/208-230 VAC



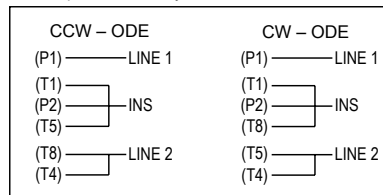
MTR2 GENERAL-PURPOSE MOTORS

1/3 hp – 1.5hp 1Ø MTR2 models
6-Lead, 115/208-230 VAC



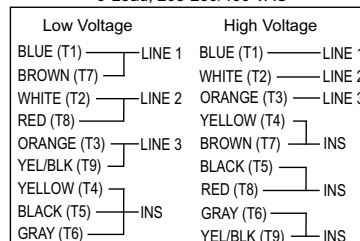
MTF FARM-DUTY MOTORS

2–5hp 1Ø Farm-Duty models ; 6-Lead, 230 VAC

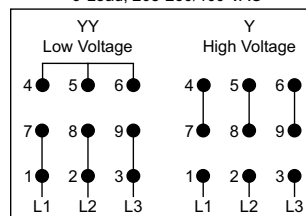


IRONHORSE® THREE-PHASE MOTORS

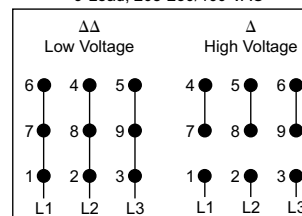
1/3 hp - 2hp 3Ø models
9-Lead, 208-230/460 VAC



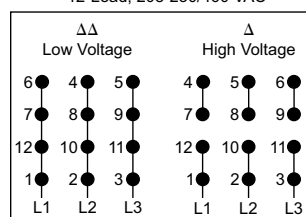
1hp - 5hp 3Ø models
9-Lead, 208-230/460 VAC



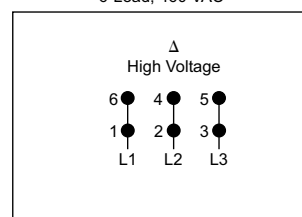
7.5 hp - 20 hp 3Ø models
9-Lead, 208-230/460 VAC



25 hp - 200 hp 3Ø models
12-Lead, 208-230/460 VAC



250 hp - 300 hp 3Ø models
6-Lead, 460 VAC



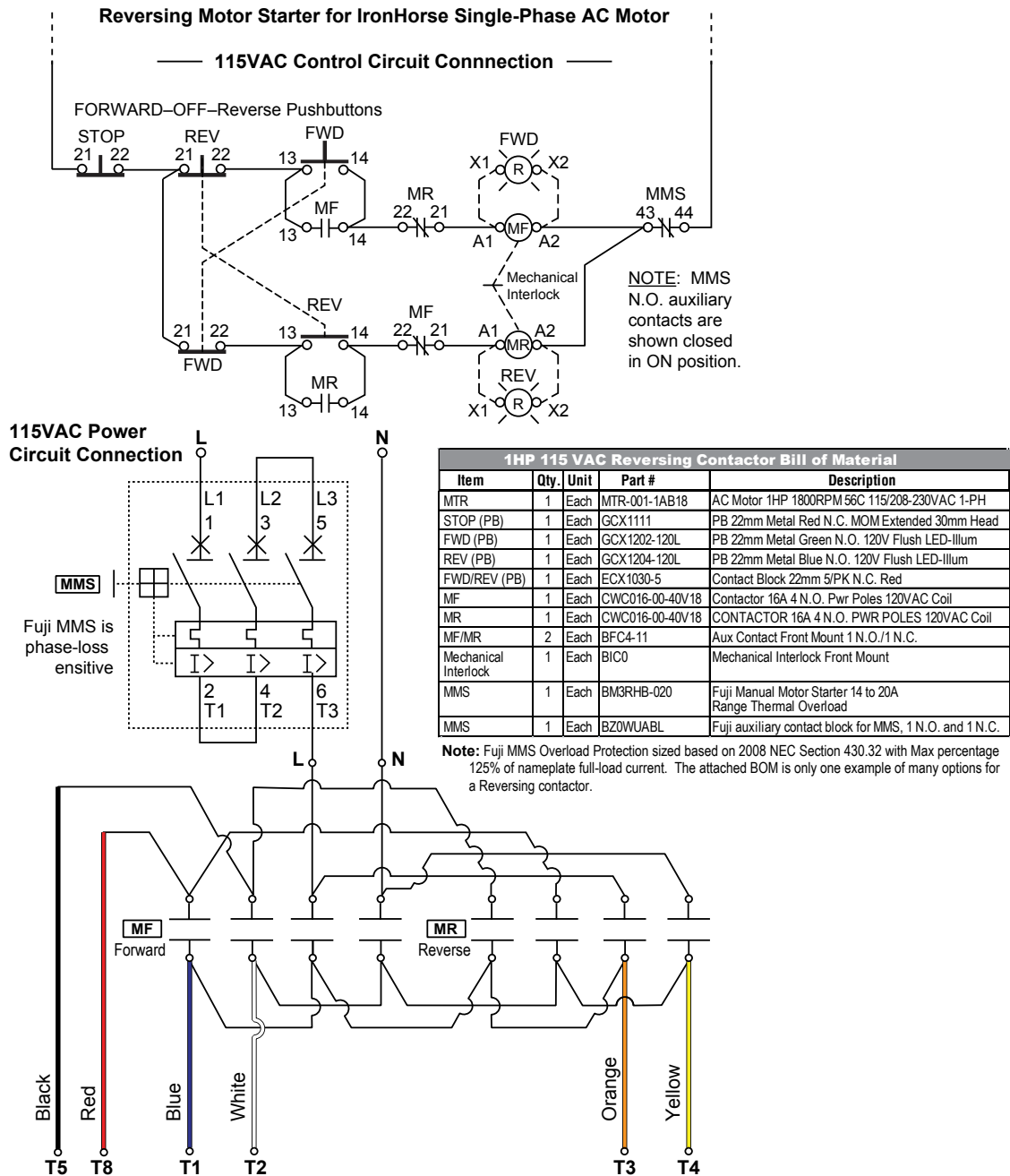
NAMEPLATE / WIRING DIAGRAM ABBREVIATIONS:

- 1) "INS" = THE WIRES ARE TO BE CONNECTED AND THEN INSULATED.
- 2) "ODE" = OPPOSITE DRIVE END.
- 3) "OPE" = OPPOSITE PULLEY END.

TERMINAL AND WIRING DIAGRAMS (CONTINUED)

SINGLE-PHASE MOTORS REVERSING DIAGRAMS

FOR 115VAC POWER CIRCUIT (115VAC CONTROL CIRCUIT)

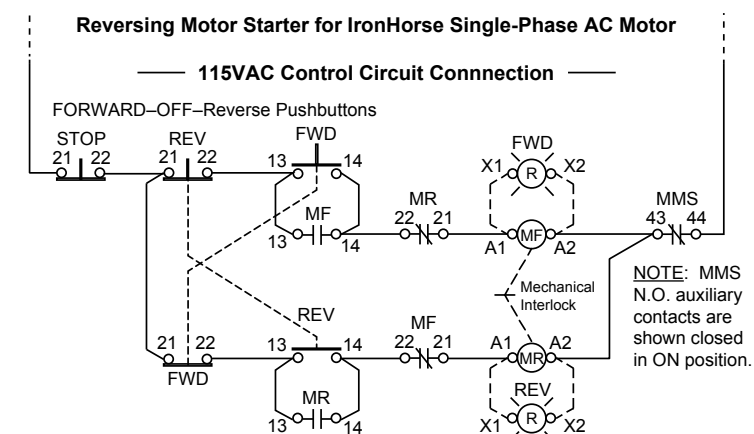


NOTE: THIS DIAGRAM INTERCHANGES THE MOTOR'S RED AND BLACK WIRES TO REVERSE MOTOR DIRECTION. ALWAYS CHECK THE MOTOR MANUFACTURER'S WIRING DIAGRAMS (OR NAMEPLATE) FOR PROPER REVERSING OF 1-PHASE MOTORS.

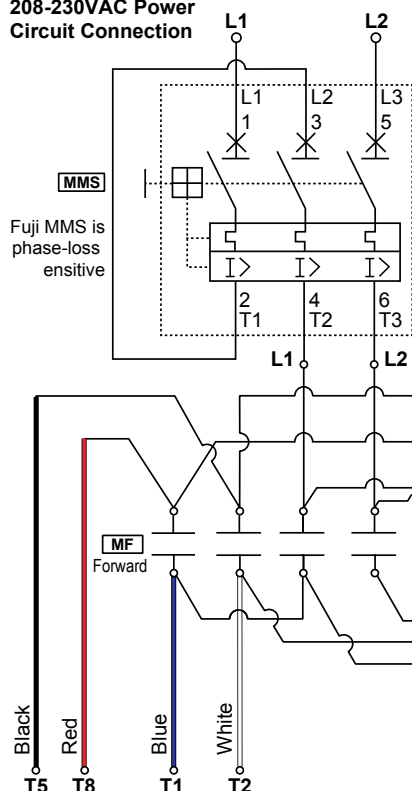


WARNING: THIS WIRING DIAGRAM DOES NOT PREVENT PLUGGING OR INSTANT REVERSING OF THE MOTOR, WHICH IS VERY STRESSFUL TO THE MOTOR AND MAY TRIP ANY OVERCURRENT/OVERLOAD PROTECTION.

FOR 208-230VAC POWER CIRCUIT (115VAC CONTROL CIRCUIT)



208-230VAC Power Circuit Connection



1HP 208 VAC Reversing Contactor Bill of Material				
Item	Qty.	Unit	Part #	Description
MTR	1	Each	MTR-001-1AB18	AC Motor 1HP 1800RPM 56C 115/208-230VAC 1-PH
STOP (PB)	1	Each	GCX1111	PB 22mm Metal Red N.C. MOM Extended 30mm Head
FWD (PB)	1	Each	GCX1202-120L	PB 22mm Metal Green N.O. 120V Flush LED-Illum
REV (PB)	1	Each	GCX1204-120L	PB 22mm Metal Blue N.O. 120V Flush LED-Illum
FWD/REV (PB)	1	Each	ECX1030-5	Contact Block 22mm 5/PK N.C. Red
MF	1	Each	CWC016-00-40V18	Contactor 16A 4 N.O. Pwr Poles 120VAC Coil
MR	1	Each	CWC016-00-40V18	CONTACTOR 16A 4 N.O. PWR POLES 120VAC Coil
MF/MR	2	Each	BFC4-11	Aux Contact Front Mount 1 N.O./1 N.C.
Mechanical Interlock	1	Each	BIC0	Mechanical Interlock Front Mount
MMS	1	Each	BM3RHB-020	Fuji Manual Motor Starter 14 to 20A Range Thermal Overload
MMS	1	Each	BZ0WUARI	Fuji auxiliary contact block for MMS 1N.O. and 1N.C.

Note: Fuji MMS Overload Protection sized based on 2008 NEC Section 430.32 with Max percentage 125% of nameplate full-load current. The attached BOM is only one example of many options for a Reversing contactor.

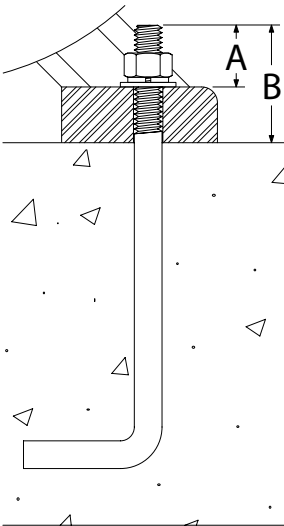
NOTE: THIS DIAGRAM INTERCHANGES THE MOTOR'S RED AND BLACK WIRES TO REVERSE MOTOR DIRECTION. ALWAYS CHECK THE MOTOR MANUFACTURER'S WIRING DIAGRAMS (OR NAMEPLATE) FOR PROPER REVERSING OF 1-PHASE MOTORS.

WARNING: THIS WIRING DIAGRAM DOES NOT PREVENT PLUGGING OR INSTANT REVERSING OF THE MOTOR, WHICH IS VERY STRESSFUL TO THE MOTOR AND MAY TRIP ANY OVERCURRENT/OVERLOAD PROTECTION.

MOTOR MOUNTING

IronHorse® motors should be properly mounted to prevent premature motor and/or bearing failure. When necessary, use motor shims to level the motor at all mounting bolt holes. Use proper diameter bolts of the highest grade material available for the application. Use the chart below to select the correct size bolt for each frame size.

A mounted motor must operate vibration free. Each motor installation should be checked for potential vibration situations. On motors 100 hp and up, we recommend that foundation studs be used to secure the motor or slide base. Base shims should also be used when necessary for level mounting.

Motor Mounting Bolt Sizes							
Frame Size	Bolt Diameter	Minimum Useable Thread Length (A)	Minimum Exposed Anchor Length (B)				
56	5/16 in	0.45 in	0.88 in				
143T							
145T							
182T	3/8 in	0.53 in	1.50 in				
184T							
213T							
215T							
254T	1/2 in	0.69 in	1.44 in				
256T			1.69 in				
284T			2.19 in				
286T							
324T	5/8 in	0.85 in					
326T							
364T		2.06 in					
365T		2.50 in					
404T	3/4 in				0.95 in		
405T							
444T							
445T							
447T							
449T		3.00 in					

MOTOR MOUNTING ORIENTATION

MTF MOTORS

MTF motors can be mounted *only* in a *horizontal* orientation.

MTR2 MOTORS

MTR2 motors can be mounted in any horizontal or vertical orientation.

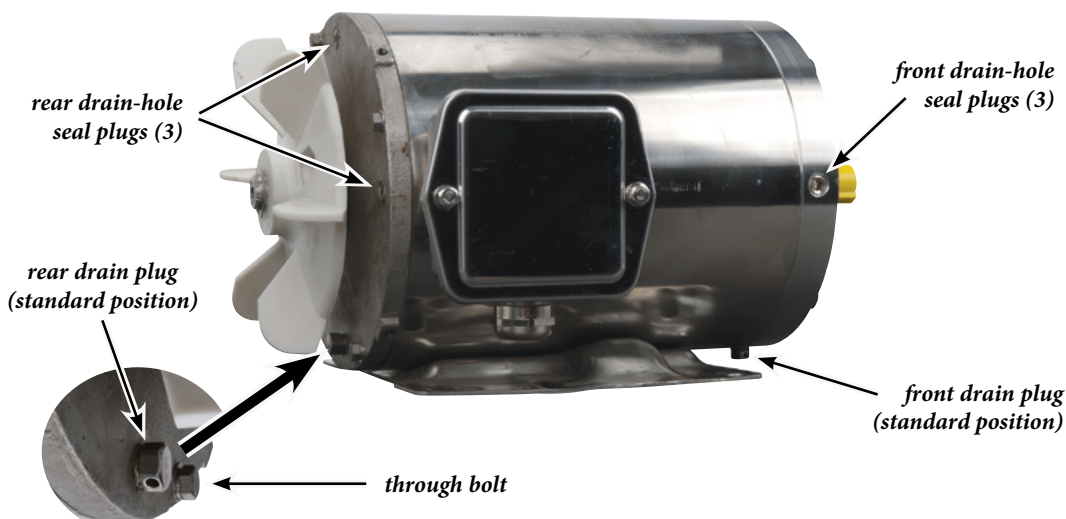
MTSS STAINLESS-STEEL MOTORS

MTSS stainless-steel motors can be mounted in any orientation, horizontal or vertical, as long as the drain plugs are installed in the two lower locations.

The motors have four drain holes in the 12:00, 3:00, 6:00, and 9:00 positions of each end of the motor. The motors are shipped with two drain plugs installed in the front and rear 6:00 positions of the end bells, and drain-hole seal plugs installed in the other positions. This is the standard arrangement for the most 'normal' horizontal mounting orientation for a rigid-base motor.

When the motors are mounted in other orientations, switch drain plugs and seals so that there are two drain plugs on opposite sides of the bottom surface of the motor. For example, in a shaft-downward mounting orientation, install both drain plugs 180° apart in the front end bell. (Remove the fan shroud for access to the rear drain plugs and seals.)

Motor shown with fan cover removed



PROPER INSTALLATION CONDITIONS

Care should be taken to make sure that an IronHorse® motor is mounted at least thirty inches from a wall or structure that would prevent proper ventilation of the motor. The installation area should be free of dust and smoke particles. Any air contaminate could inhibit proper operation of the motor fan.

If an IronHorse motor is to be installed in a high altitude or in a low temperature location, use the Altitude / Ambient Temperature Derating chart below for proper motor sizing.

Altitude / Ambient Temperature Derating Chart								
		Altitude - Meters (Feet) Above Sea Level						
		1000 (3281)	1500 (4921)	2000 (6562)	2500 (8202)	3000 (9842)	3500 (11,483)	4000 (13,123)
Temperature - °C (°F)	10°C (50°F)	—	—	—	—	—	—	1.50
	15°C (59°F)	—	—	—	—	—	1.05	0.99
	20°C (68°F)	—	—	—	—	1.05	0.99	0.93
	25°C (77°F)	—	—	—	1.05	0.98	0.93	0.88
	30°C (86°F)	—	—	1.05	0.97	0.92	0.87	0.82
	40°C (104°F)	1.00	0.94	0.89	0.85	0.80	0.76	0.72
	50°C (122°F)	0.85	0.8	0.76	0.72	0.68	0.65	0.62
	60°C (140°F)	0.71	0.67	0.64	0.60	0.57	0.55	0.52

Example: 100 hp @ 60°C and 2000 Meters
 $100 / 0.64 = 156 \text{ hp}$
 The motor should be a 200 hp motor.

COUPLING ALIGNMENT

Correct coupling alignment is very important to the life of the motor. Coupling misalignment is the major cause of motor bearing failure. In belt driven applications, pulleys should be installed correctly. Belt tension, alignment and wear should be checked at installation and at regular maintenance intervals. Install motor couplings per the manufacturers instructions. Whenever possible, direct couple or flange mount IronHorse motors in their application. Doing so can extend the bearing life greatly.

AutomationDirect offers C-face mounting kits for all PE and EAct T-frame IronHorse motors. For a complete list of mounting kits see Chapter 4 (Accessories).

MOTOR NAMEPLATE & STARTER INFORMATION

TYPICAL IRONHORSE® MOTOR NAMEPLATE

GENERAL PURPOSE IRONHORSE INDUSTRIAL MOTOR			
HP: 3/4	Model: MTR-P75-1AB18	LOW VOLT	HIGH VOLT
RPM 1725	Ser.#: 0707121305	BLUE(T1) — LINE1	BLUE(T1) — LINE1
PH:1 Hz: 60	Duty: CONT.	ORANGE(T3) — LINE1	RED(T8) — LINE1
VOLT: 115/230	S.F.: 1.15	RED(T8) — LINE1	WHITE(T2) — INS
AMB: 40°C	CODE: L	WHITE(T2) — LINE2	ORANGE(T3) — INS
FR.: 56C	INS.CL.: F	YELLOW(T4) — LINE2	BLACK(T5) — LINE2
ENCL.: TEFC	FL AMPS: 6.6/3.3	BLACK(T5) — LINE2	YELLOW(T4) — LINE2
ROTATION CW-OPE TO REVERSE EITHER VOLTAGE INTERCHANGE RED & BLACK LEADS. Acceptable for Field Wiring			
WWW.AUTOMATIONDIRECT.COM			

MOTOR STARTER INFORMATION

IronHorse® general purpose motors can be controlled by across-the-line starters such as contactors and manual motor starters. Under certain circumstances, three phase IronHorse motors can also be controlled by AC drives. Refer to Chapter 5 (Reference) for more information about using AC drives with IronHorse motors.

Use the following chart to help determine the appropriate across-the-line starter.

Starting System Information						
Frame Size *	Number of Internal Leads	Internal Lead Size	Internal Lead Length	Voltage	Winding Type	
56C (1Ø)	6	16 AWG	6 in	115/208-230	N/A	
56C (3Ø)	9		9-1/2 in	208-230/460	Wye	
143T – 145T						
182T – 184T					Delta	
213T						
215T						
254T – 256T	14 AWG	10-5/8 in	208-230/460	Wye / Delta		
284T – 286T	12 AWG					
324T – 326T	10 AWG					
364T – 365T	8 AWG					
404T – 405T	6 AWG					
444T – 445T	4 AWG	13 in	13-3/4 in	Wye / Delta		
447T	3 AWG					
449T	6	1 AWG			14 in	460

* TC-frame motors have the same starting system characteristics as the comparable T-frame motors.

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LOCKED ROTOR AMPS

All electrical components used in an IronHorse motor installation must be able to handle the maximum current draw of the motor. When using a typical across-the-line starter, current is highest when power is first applied to the motor. This is commonly referred to as locked rotor amps. Every IronHorse motor has a locked rotor amperage code letter stamped on the motor nameplate either as “CODE” or “kVA Code”. This letter applies to the locked rotor amp range value. See the motor “Performance Data” tables in Chapter 1 (Getting Started) for specific locked rotor amperage information.

INSPECTION BEFORE STARTUP

- 1) Remove the shaft lock device if the motor was supplied with one.
- 2) Turn the shaft by hand and make sure the shaft turns freely. Listen for any unusual noises and feel for any interruption in the shaft as it turns.
- 3) In all motors with serviceable bearings, check the grease level on drive end and opposite drive end bearings. Make sure the bearing cavities are filled with Mobil POLYREX® EM Polyurea grease to the proper running level.
- 4) Perform a final check on the installation of all parts in the assembly. Check the motor mounting bolts, coupling, belt drive, C-face mount, alignment, etc.
- 5) Verify all electrical connections for the motor and starter. Refer to the motor diagram on the motor nameplate. Make sure all terminal screws are tightened properly.
- 6) Make sure that all electrical components used in the installation are rated for the locked rotor amperage.
- 7) Make sure the motor is properly grounded. Use the grounding lug provided in the motor terminal box or on the mounting foot.

INITIAL STARTUP INSPECTION

- 1) At initial startup monitor the start-up voltage and the running voltage of the motor. The full load voltage should never exceed the line voltage on the motor nameplate multiplied by the service factor of the motor.
Example: 230 VAC x 1.15 = 264.5 VAC.
- 2) Check the full load running amperage of the motor. The full load running amperage should not be more than the amount indicated on the motor nameplate
- 3) Listen for any unusual noises at motor start-up and in the first hour of operation. Listen for any unusual bearing noise in the drive end and opposite drive end of the motor. Abnormal bearing noise can be an indication of a defective bearing or the motor grease could be low. If there is abnormal noise in motors with serviceable bearings, shut down the motor and check the grease level on both the drive end and opposite drive end.



DO NOT OVER GREASE THE BEARINGS. OVER GREASING MOTOR BEARINGS IS A COMMON CAUSE OF MOTOR FAILURE.



LARGE HORSEPOWER MOTORS WITH ROLLER BEARINGS WILL TYPICALLY BE NOISIER THAN BALL BEARING MOTORS AT INITIAL MOTOR START-UP AND IN NORMAL OPERATION.

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